

CLAIMS

What is claimed is:

1 1. An image data processing method comprising:
2 accessing image data of an image and comprising a plurality of pixels;
3 defining a plurality of subsets of the pixels;
4 defining an overlapping region comprising image data of pixels located
5 adjacent to a boundary intermediate one and an other of the subsets;
6 independently processing the image data of the one and the other of the
7 subsets individually comprising comparing the image data for respective ones of
8 the pixels with a plurality of thresholds corresponding to respective ones of the
9 pixels; and
10 modulating the thresholds of the pixels of the overlapping region using a
11 common modulation pattern for both the processing of the one and the other
12 subsets.

1 2. The method of claim 1 wherein the processing comprises for the
2 one of the subsets using image data of the other of the subsets within the
3 overlapping region, and for processing the other of the subsets using the image
4 data of the one of the subsets within the overlapping region.

1 3. The method of claim 2 wherein the processing of the image data of
2 the one of the subsets comprises discarding the image data of the other of the
3 subsets and wherein the processing of the image data of the other of the
4 subsets comprises discarding the image data of the one of the subsets.

1 4. The method of claim 1 further comprising splicing the processed
2 image data of the one and the other subsets to form a composite image.

1 5. The method of claim 1 wherein the modulating provides, for
2 individual ones of the pixels of the overlapping region, the same threshold for
3 the processing of the image data of the one and the other of the subsets.

1 6. The method of claim 5 further comprising providing an absolute
2 indexing scheme for pixels of the overlapping region.

1 7. The method of claim 1 wherein the modulating comprises
2 modulating according to a first modulation scheme, and further comprising
3 modulating the thresholds of the pixels of the one and the other subsets not
4 within the overlapping region according to a second modulation scheme different
5 than the first modulation scheme.

1 8. The method of claim 1 wherein the independently processing
2 comprises halftoning the image data.

1 9. The method of claim 8 wherein the halftoning comprises halftoning
2 using error diffusion.

1 10. The method of claim 1 further comprising attenuating the
2 modulating to a lesser degree for pixels located adjacent to the boundary
3 compared with pixels spaced increased distances with respect to the boundary.

1 11. The method of claim 1 further comprising hard imaging the image
2 data upon media after the processing.

1 12. The method of claim 1 wherein the independently processing
2 comprises processing the image data of the subsets using respective ones of a
3 plurality of independent processing circuits.

1 13. An image data processing method comprising:
2 accessing image data of an image and comprising a plurality of pixels;
3 defining a plurality of subsets of the pixels;
4 independently processing image data of the subsets using error diffusion,
5 wherein the error diffusion processing of the image data of the pixels of one of
6 the subsets comprises processing using image data of the pixels of an other of
7 the subsets; and

8 after the processing, splicing the image data of the subsets to provide a
9 composite version of the processed image data of the image.

1 14. The method of claim 13 wherein the processing of the image data
2 of the pixels of the one of the subsets using the image data of the pixels of the
3 other of the subsets comprises using the image data of the pixels of the other of
4 the subsets residing within an overlapping region adjacent to a boundary
5 intermediate the plurality of the subsets.

1 15. The method of claim 14 wherein processing of the image data of
2 the pixels within the overlapping region during the processing of the one and the
3 other subsets comprises processing using a common threshold modulation
4 scheme comprising comparing the image data of the pixels of the overlapping
5 region with the same thresholds during the processing of the image data of the
6 one and the other subsets.

1 16. The method of claim 15 further comprising attenuating threshold
2 modulation of the common threshold modulation scheme to a lesser degree for
3 pixels located adjacent to the boundary compared with pixels spaced increased
4 distances with respect to the boundary.

1 17. The method of claim 14 wherein the processing comprises
2 comparing the image data of the pixels with a plurality of respective thresholds,
3 and further comprising modulating the thresholds for the pixels of the
4 overlapping region using a common modulation pattern.

1 18. The method of claim 13 wherein the independently processing
2 comprises processing using a plurality of respective processors.

1 19. The method of claim 18 wherein the independently processing
2 comprises processing without using communications intermediate the
3 processors.

1 20. The method of claim 18 wherein the independently processing
2 comprises processing without synchronization of the processors.

1 21. A hard imaging device comprising:
2 an image engine configured to generate a hard image upon media using
3 image data of an image; and
4 a plurality of processors configured to access different respective subsets
5 of the image data used to generate the hard image, and wherein the processors
6 are further configured to independently process the image data of respective
7 ones of the subsets using error diffusion halftone processing, and wherein an
8 individual one of the processors is configured to implement the error diffusion
9 halftone processing of the image data of the respective one of the subsets using
10 image data of an other of the subsets; and
11 wherein the processed image data of the respective subsets is spliced for
12 the generation of the hard image using the image engine.

1 22. The device of claim 21 wherein the image data comprises data for
2 a plurality of pixels and wherein the processors are individually configured to
3 define an overlapping region comprising image data of selected ones of the
4 pixels located adjacent to a boundary intermediate the one and the other of the
5 subsets, and wherein the processing of the image data of the respective one of
6 the subsets comprises processing using the image data of pixels of the other of
7 the subsets residing within the overlapping region.

1 23. The device of claim 22 wherein the processing of the image data
2 of the pixels within the overlapping region during the processing of the one
3 subset comprises processing using a common threshold modulation scheme
4 comprising comparing the image data of the pixels of the overlapping region
5 with the same thresholds during the processing of the one and the other
6 subsets.

1 24. The device of claim 22 wherein the processors are individually
2 configured to process the image data of the respective subset comprising
3 comparing the image data of the pixels of the respective subset with a plurality
4 of respective thresholds and to modulate the thresholds of the pixels of the
5 overlapping region using a common modulation pattern.

1 25. The device of claim 24 wherein the modulation of the thresholds
2 provides identical thresholds for the pixels of the overlapping region for
3 comparing during processing of the one and the other subsets.

1 26. The device of claim 24 wherein the processors are configured to
2 attenuate the modulation to a lesser degree for pixels located adjacent to a
3 boundary intermediate the subsets compared with pixels spaced increased
4 distances with respect to the boundary.

1 27. The device of claim 22 wherein the processors are configured to
2 modulate the thresholds of pixels of the overlapping region according to a first
3 modulation scheme; and to modulate thresholds of pixels of the one and the
4 other subsets not within the overlapping region according to a second
5 modulation scheme different than the first modulation scheme.

1 28. The device of claim 21 wherein the processors are individually
2 configured to discard processed image data of the other of the subsets after
3 obtaining processed image data for the respective one of the subsets.

1 29. A hard imaging device comprising:
2 interface means for accessing image data of an image and comprising a
3 plurality of pixels;
4 processing means coupled with the interface means, and the processing
5 means comprising independent processing means for independently processing a
6 plurality of respective subsets of the image data using an overlapping region
7 comprising image data of respective adjacent ones of the subsets, wherein the

8 processing comprises comparing the image data of the pixels with respective
9 ones of a plurality of different thresholds for the respective pixels;

10 wherein the processing of an individual one of the subsets using a
11 respective one of the independent processing means comprises processing pixels
12 of both of the subsets of the overlapping region using the same threshold
13 modulation of the thresholds as the processing of the same pixels using an other
14 of the independent processing means; and

15 imaging means coupled with the processing means, and the imaging
16 means comprising means for generating a hard image upon media using the
17 image data.

1 30. The device of claim 29 wherein the processing means comprise a
2 plurality of respective processing circuits configured to process respective ones
3 of the subsets in parallel.

1 31. An article of manufacture comprising:

2 processor-usable media comprising programming configured to cause one
3 of a plurality of independent processing circuits to:

4 access image data for a plurality of pixels of one subset of the
5 image data, wherein the image data comprises data of an image;

6 access image data for a plurality of pixels of an other subset of the
7 image data; and

8 process the image data of the pixels of the one subset of the
9 image data, wherein the processing comprises implementing halftone error
10 diffusion processing of the image data of the pixels of the one subset using the
11 image data of the pixels of the other subset of the image data.

1 32. The article of claim 31 wherein the programming is further
2 configured to cause the one of the independent processing circuits to generate
3 an overlapping region adjacent a boundary intermediate the one and the other
4 subsets, and wherein the processing of the image data of the pixels of the one
5 of the subsets using the image data of the pixels of the other of the subsets

6 comprises using the image data of the pixels of the other of the subsets residing
7 within the overlapping region.

1 33. The article of claim 32 wherein the programming is further
2 configured to cause the one of the independent processing circuits to compare
3 the image data of the pixels with a plurality of respective thresholds and to
4 modulate the thresholds for the pixels of the overlapping region using a common
5 modulation pattern used by an other of the independent processing circuits.

1 34. The article of claim 33 wherein the programming is further
2 configured to cause the one of the independent processing circuits to attenuate
3 the threshold modulation to a lesser degree for pixels located adjacent to the
4 boundary compared with pixels spaced increased distances with respect to the
5 boundary.